

CLAIMS

What is claimed is:

- 1 1. A device for cutting or coagulating tissue, said device comprising:
2 an elongate member having a distal end;
3 at least one foot member extending from the distal end of the elongate
4 member, said at least one foot member having an upper surface and a lower
5 surface;
6 an electrically and thermally insulating covering formed on at least the
7 lower surface of the foot member; and
8 at least one electrode on the upper surface of the at least one foot
9 member.
- 1 2. A device according to Claim 1 wherein the at least one foot member
2 comprises a plurality of foot members that are separated from one another by
3 open areas or is configured to comprise a plurality of foot member portions
4 that are separated from one another by open areas.
- 1 3. A device according to Claim 2 wherein the at least one foot member is
2 furcated to form at least a) a right foot member portion having an upper
3 surface and a lower surface, b) a left foot member portion having an upper
4 surface and a lower surface and c) an open area between the right foot
5 member portion and the left foot member portion.
- 1 4. A device according to Claim 3 wherein the device is bipolar and
2 wherein a first electrode is located on the upper surface of the first foot
3 member portion and a second electrode is located on the upper surface of the
4 second foot member portion.
- 1 5. A device according to Claim 1 wherein the at least one electrode, when
2 energized, will create a tissue damaging thermal zone above the upper

3 surface of the at least one foot member but not below the at least one foot
4 member.

1 6. A device according to Claim 1 in combination with an electrosurgical
2 generator for energizing the at least one electrode, wherein the at least one
3 electrode, when energized by the electrosurgical generator, causes
4 substantial thermal cutting and/or coagulation of tissue located above the
5 upper surface of the at least one foot member but does not cause substantial
6 thermal cutting and/or coagulation of tissue located below the at least one foot
7 member.

1 7. A device according to Claim 3 in combination with an electrosurgical
2 generator for energizing the first and second electrodes such that they cause
3 substantial thermal cutting and/or coagulation of tissue located above the
4 upper surfaces of the right and left foot member portions or above the open
5 space located between the right and left foot member portions, but does not
6 cause substantial thermal cutting and/or coagulation of tissue located below
7 right and left foot member portions or below the open space located between
8 the right and left foot member portions.

1 8. A device according to Claim 1 wherein an electrically and thermally
2 insulating covering is formed on the upper and lower surfaces of the at least
3 one foot member and wherein the at least one electrode is located on top of
4 the electrically and thermally insulating covering formed on the upper surface
5 of the at least one foot member.

1 9. A device according to Claim 1 further comprising at least one lumen
2 useable for infusion of fluid or matter and/or aspiration of fluid or matter.

1 10. A device according to Claim 9 wherein the device comprises first and
2 second lumens such that fluid or matter may be infused through one lumen
3 while fluid or matter is aspirated through the other lumen.

- 1 11. A device according to Claim 1 wherein the insulating covering
2 comprises a coating.
- 1 12. A device according to Claim 1 wherein the insulating covering
2 comprises a polymer coating.
- 1 13. A device according to Claim 12 wherein the polymer coating comprises
2 a polyimide coating.
- 1 14. A device according to Claim 1 wherein the covering comprises a
2 coating that has been applied to at least the lower surface of the foot member
3 by a coating method selected from the group consisting of:
4 single layer dip coating
5 multi layer dip coating
6 painting
7 powder (electro statically)
8 vapor deposition.
- 1 15. A device according to Claim 1 further comprising a handpiece from
2 which the elongate member extends.
- 1 16. A device according to Claim 15 wherein the elongate member is
2 releasably attached to the handpiece.
- 1 17. A device according to Claim 15 wherein the elongate member is
2 disposable and the handpiece is reusable.
- 1 18. A device according to Claim 15 wherein the elongate member is
2 permanently attached to or integrally formed with the handpiece.
- 1 19. A device according to Claim 18 wherein the handpiece and elongate
2 member are autoclavable.

1 20. A device according to Claim 1 wherein the device is formed on,
2 incorporated into or inserted through a cannula, said cannula being
3 advancable into the body of a human or animal subject.

1 21. A device according to Claim 1 wherein the cannula comprises a rigid
2 cannula.

1 22. A device according to Claim 1 wherein the cannula comprises a flexible
2 catheter or percutaneously insertable catheter.

1 23. A device according to Claim 1 wherein the device is formed on,
2 incorporated into or inserted through an endoscopic device, said endoscopic
3 device being advancable into the body of a human or animal subject.

1 24. A device according to Claim 23 wherein the endoscopic device is
2 selected from the group consisting of:
3 gastrointestinal endoscopes;
4 dental endoscopes;
5 sigmoidoscopes;
6 colonoscopes;
7 laparoscopes;
8 thoracoscopes;
9 cystoscopes; and
10 arthroscopes.

1 25. A method for selective electrosurgical cutting or coagulation of tissue,
2 said method comprising the steps of:
3 A) providing a device which comprises;
4 i. an elongate member having a distal end;
5 ii. at least one foot member extending from the distal end of the
6 elongate member, said foot member having an upper surface and a lower
7 surface;

- 8 iii. an electrically and thermally insulating covering formed on at
9 least the lower surface of the foot member; and
- 10 iv. at least one electrode on the upper surface of the foot member;
- 11 B) positioning the device such that tissue that is to be cut or
12 coagulated is located above the upper surface of the at least one foot
13 member and other tissue is located below the lower surface of the at
14 least one foot member; and
- 15 C) energizing the at least one electrode such that tissue located
16 above the upper surface of the at least one foot member is cut or
17 coagulated and tissue that is located below the lower surface of the at
18 least one foot member is not substantially cut or coagulated.

1 26. A method according to Claim 25 wherein the at least one foot member
2 of the device provided in Step A is configured to form a plurality of foot
3 members or foot member portions that are separated from one another by
4 open area(s) and wherein Step C comprises:

5 energizing the at least one electrode such that tissue located above the
6 upper surface of the foot members or foot member portions and the open
7 spaces therebetween is cut or coagulated and tissue that is located below the
8 lower surface of the foot members or foot member portions and below the one
9 or more open areas therebetween is not substantially cut or coagulated.

1 27. A method according to Claim 25 wherein the at least one foot member
2 of the device provided in Step A is configured to form a plurality of foot
3 members or foot member portions that are separated from one another by
4 one or more open areas and the procedure is being carried out at least in part
5 for the purpose of severing a first mass of tissue that extends from a second
6 mass of tissue and wherein:

7 Step B comprises positioning the device such that the first mass of
8 tissue extends through an open area between adjacent foot members or foot
9 member portions and the second mass of tissue is below the lower surfaces
10 of the foot members or foot member portions; and

11 Step C comprises energizing the at least one electrode such that the
12 first mass of tissue is severed from the second mass of tissue without causing
13 substantial damage to the first mass of tissue.

1 28. A method according to Claim 25 wherein the first mass of tissue
2 comprises a tumor and the second mass of tissue comprises normal
3 anatomical tissue.

1 29. A method according to Claim 25 wherein the first mass of tissue
2 comprises a blood vessel and the second mass of tissue comprises normal
3 anatomical tissue.

1 30. A method according to Claim 25 wherein the first mass of tissue
2 comprises an adhesion and the second mass of tissue comprises normal
3 anatomical tissue.

1 31. A method according to Claim 25 wherein the first mass of tissue
2 comprises a gastrointestinal polyp, tumor or other growth and the second
3 mass of tissue comprises the wall of the colon, small intestine, duodenum,
4 stomach, esophagus, oropharynx or oral cavity.

1 32. A method according to Claim 25 wherein the first mass of tissue
2 comprises a retinal blood vessel and the second mass of tissue comprises the
3 retina.

1 33. A method according to Claim 25 wherein the first mass of tissue
2 comprises an epiretinal membrane and the second tissue comprises the
3 retina.

1 34. A method according to Claim 25 wherein the first mass of tissue
2 comprises gingival tissue and the second mass of tissue comprises a tooth,
3 root, nerve or other anatomical structure of the oral cavity or head.

1 35. A method according to Claim 25 wherein the first mass of tissue
2 comprises a dermatological lesion and the second mass of tissue comprises
3 skin.

1 36. A method according to Claim 25 wherein the first mass of tissue
2 comprises neurological tissue or abnormal tissue that is attached to
3 neurological tissue and the second mass of tissue comprises neurological
4 tissue.

1 37. A method according to Claim 25 wherein the first mass of tissue
2 comprises a nodule or other growth on a vocal chord and the second mass of
3 tissue comprises vocal chord.

1 38. A method according to Claim 25 wherein the first mass of tissue
2 comprises pericardium, endocardium or cardiac tissue that is to be cut and
3 the second mass of tissue comprises myocardium, a coronary or cardiac
4 blood vessel, tendonous chord, papillary muscle, heart valve, trabeculae,
5 cardiac nodal tissue, coronary venous sinus, septum or other normal cardiac
6 tissue.

1 39. A method according to Claim 25 wherein the first mass of tissue
2 comprises cartilage, tendon or ligament and the second mass of tissue
3 comprises bone, periostium, muscle or other normal anatomical tissue.

1 40. A method according to Claim 25 wherein Step B further comprises
2 passing the device through a channel of an endoscopic device.